ABSTRACT

Disclosed is a method of manufacturing a MIM (metal-insulator-metal) capacitor using copper as a lower electrode. The MIM capacitor is manufactured by the following processes. A lower copper electrode is formed on a substrate. A photoresist pattern having a capacitor hole through which the lower copper electrode is exposed, is then formed. Next, the surface of the photoresist pattern is hardened to form a photoresist hardening layer. Thereafter, a capacitor dielectric film and an upper electrode material layer are formed on the photoresist hardening layer including the capacitor hole. The upper electrode material layer and the capacitor dielectric film are then polished by means of chemical mechanical polishing process to form an upper electrode within the capacitor hole. Finally, the photoresist pattern including the photoresist hardening layer is removed. As such, the MIM capacitor is manufactured without using the mask process and the etch process. Therefore, it is possible to prevent decrease in the reliability and yield of the device due to etch damage of the lower copper electrode.